

C) 2. (thrice amended) The conveyor according to claim 1, characterized in that the at least one catch element (18) has a locking face (22) facing at least partially the transfer region (15) to prevent any elongate component (12), which has passed into the transfer region (15), from slipping therefrom.

---

REMARKS

Applicants are filing, in this application and on even date herewith, a petition requesting that the period for response to the above-noted Office action be extended by three months to March 12, 2002.

In a response paper, dated November 8, 2000, filed in this application, applicants cancelled claims 3, 4, 5 and 6, and submitted new claims 15 through 26. Thereafter, in a Final Office action, dated February 1, 2001, the Examiner indicated that new claims 16 through 26 were directed to inventions other than the invention covered in original claims 1 through 14, and that new claims 16 through 26 were being withdrawn from consideration. However, the Examiner apparently considered that new claim 15 was directed to the invention covered by original claims 1 through 14, whereby claim 15 was considered along with the remaining active claims 1, 2 and 7 through 14.

In the above-noted Final Office action, the Examiner then rejected claims 1, 2 and 7 through 15. In a response to the Final Office action, filed in the USPTO on June 6, 2001, applicants rewrote several of the rejected claims, including claim 15, and cancelled claims 16 through 26. In an Advisory Action, dated June 21, 2001, the Examiner continued the rejection of claims 1, 2 and 7 through 15.

On June 26, 2001, applicants filed a Request for Continued Examination, and requested that the above-noted response filed on June 6, 2001, be considered. In an Office action, dated September 12, 2001, (to which this paper is a response), the Examiner rejected claims 1, 2 and 7 through 14, but did not make any reference in the Office action regarding the status of claim 15.

Applicants submit that claim 15 is allowable for the reasons expressed below, and request that the Examiner consider such allowance of claim 15.

In the above-noted Office action, claim 2 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which applicants regard as their invention. In particular, it is unclear to the Examiner how the locking face (22) is considered as facing in a direction opposite to the feed path direction, since, as the Examiner contends, the locking face faces in the same direction as the feed path.

Applicants have amended claim 2 to set forth that the locking face (22) is facing the transfer region (15). This feature is consistent with the applicants' specification and the illustrations of Figs. 1 and 4 of applicants' drawings.

Applicants submit that claim 2, as amended, is definite, and request the withdrawal of the rejection thereof under 35 U.S.C. § 112, second paragraph.

Claims 1, 2, 7 and 8 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,813,114 (hereinafter "the Blacket patent").

The Blacket patent shows a riveting machine which includes a supply passage 20 (120, 220, etc.) for feeding a rivet 17 (217, 317, etc.) into a delivery passage 12 (112, 212, etc.), which is separate from, and in communication with, the supply passage. A punch 16 (216) is located for axial movement within the delivery passage 12, and is operable to engage and drive the rivet 17 axially from the delivery passage. Note that the delivery passage 12 is separate from the supply passage 20.

By reciting applicants' claim 1 without the numerals therein, and by inserting terminology and numerals from the Blacket patent into selected portions of the recited claim 1, the Examiner has attempted to show (1) that the supply passage (920) of the Blacket patent is comparable to "a feed duct," identified in applicants'

claim 1 by the numeral "(11)", (2) that various embodiments of fingers, bars, pins, rods and balls (260, 960, 1060, 1160) of the Blacket patent are comparable to "a catch element," identified in applicants' claim 1 by the numeral (18), and (3) that the springs 961 of the Blacket patent are comparable to "a biasing element," identified in applicants' claim 1 by the numeral (39).

Applicants agree that the supply passage (920) of the Blacket patent is comparable to the feed duct (11) of applicants' claim 1. However, applicants submit that the fingers, bars, pins, rods and balls (260, 960, 1060, 1160) of the Blacket patent are not comparable to "a catch element (18)" **located externally of the transfer region (15)** and having at least one portion (21) extendable into and out of **the feed path of the head guiding duct (13)**, which is a part of the feed duct (11). Instead, the fingers, bars, pins, rods and balls (260, 960, 1060, 1160) of the Blacket patent are located in the delivery passage 912 thereof, and not in the supply passage 920, and are designed to support the rivet 917 in a position for engagement with the punch 16, which travels through the delivery passage and not through the supply passage.

To clearly set forth this distinction of applicants' invention over any teaching of the Blacket patent, applicants have amended claim 1 to set forth that the catch (18) is external of the transfer region (15).

Further, the fingers, bars, pins, rods and balls (260, 960, 1060, 1160) are not located at any time in the supply passage (920), but are located in the delivery passage (912). Therefore, the biasing element (961) of the Blacket patent can not and does not "normally urge" any portion of the fingers, bars, pins, rods and balls into the supply passage (920), in the manner that the biasing element (39) of applicants' claim 1 urges the at least one portion (21) into "the feed path of the guiding duct (13)."

In distinguishing over this teaching of the Blacket patent, applicants set forth in applicants' claim 1 that the catch element (18) and the portion (21) thereof are mounted for deflected movement out of the feed path of the head guiding duct (13) upon

engagement with each elongate component (12) being fed through the feed path of the head guiding duct (13).

Applicants' claim 2 further distinguishes over any teaching of the Blacket patent by having a locking face (22) on the catch element (18), and, further, is external of the transfer region (15).

Applicants' claim 7 further distinguishes over any teaching of the Blacket patent by setting forth that the catch element (18) is movable pivotally around an axis (38), and that the biasing element (39) acts on, and allows movement of, the catch element from the feed path upon engagement with the elongate components (12) passing through the feed path.

Applicants' claim 8 further distinguishes over any teaching of the Blacket patent by setting forth that the "at least one portion (21)" of the catch element (18) is a first end thereof, the catch element has a second end, the axis (38) is intermediate the first and second ends, and the biasing element (39) is arranged to engage the catch element between the axis and the first end.

For the foregoing reasons, applicants submit that applicants' claims 1, 2, 7 and 8 clearly and patentably distinguish over any teaching of the Blacket patent, and hereby request the withdrawal of the rejection of these claims based on the Blacket patent.

Claims 1, 2 and 7 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,579,975 (hereinafter "the Moorman patent").

The Moorman patent shows a nail driving tool for locating a pre-existing hole 64 (Fig. 6) in a first workpiece 65 and driving a lead nail 26a therethrough and into a second workpiece 66. Referring to Figs. 1 and 2 of the Moorman patent, a magazine 19, containing a serial supply of the nails 26, is mounted for movement in a vertical direction from a lower position (Fig. 1) to an upper position (Fig. 2). As shown in Fig. 6, the supply of nails 26 are maintained in a stacked arrangement, with the nails being carried by the magazine 19 to move from the lower position to the upper position with the magazine 19 (see column 8, lines 17 through 49).

As clearly shown in Figs. 6 through 9 of the Moorman patent, a bell-crank-shaped pawl 59 is mounted, by a pivot pin 60, to the magazine 19 for pivotal movement relative thereto. A leaf spring 61 is mounted on an elongated block 52, which, in turn, is mounted on the magazine 19, to normally urge the underside of an upper wing of the pawl 59 (shown in solid in Fig. 7) in a **clockwise** direction about the pivot pin 60 and against a ledge formed on the block 52 (Fig. 7). Under this condition, a lower end (Fig. 7) of a lower wing of the pawl 59 is always **above** (see Fig. 7) the advancing heads of the nails 26, which are being fed on a declining path.

When the tip of the lead nail 26a has been located within the pre-existing hole 64 (Fig. 6), a flat side 8a of a driver 8 (Fig. 6) engages a left side (FIG. 7) of the lower wing of the pawl 59 and pivots the pawl, against the bias of the leaf spring 61, thereby allowing the pawl to be pivoted to the dashed-line position in Fig. 7. At this time, the bottom of the lower wing of the pawl 59 is located **above** the head of the second nail 26 as shown in Fig. 7. (See column 7, lines 60 through 66 and column 8, lines 1 through 16.)

If the lower wing of the pawl 59 (Figs. 6 and 7) was in the path of the advancing heads of the nails 26, as the Examiner indicates, the advancing head of the lead nail would **attempt** to move the pawl in a **clockwise** direction about the pivot pin 60, but would be precluded from doing so because the underside of the upper wing of the pawl is in engagement with the ledge of block 52, and cannot be moved in a clockwise direction. Consequently, the nails 26 would be precluded from travelling through the feed path.

For the foregoing reasons, applicants' claim 1, and claims 2 and 7, which depend from claim 1, distinguish over any teaching of the Moorman patent.

Applicants' claim 2 further distinguishes over any teaching of the Moorman patent by having a locking face (22) on the catch element (18).

Applicants' claim 7 further distinguishes over any teaching of the Moorman patent by setting forth that the catch element (18) is movable pivotally around an axis (38), and that the biasing element (39) acts on, and allows movement of, the catch element from the feed path upon engagement with the elongate components (12) passing through the feed path.

For the foregoing reasons, applicants submit that applicants' claims 1, 2 and 7 clearly and patentably distinguish over any teaching of the Moorman patent, and hereby request the withdrawal of the rejection of these claims based on the Moorman patent.

Claims 9 through 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Blacket patent.

As described in the specification of the Blacket patent, at column 4, lines 63, 64 and 65:

"Pins (or balls) 260 to be hereinafter described, engage and support the rivet 217 **in the delivery passage 212** until engaged by the punch 216." (Emphasis added)

and further at column 5, lines 2 through 6:

"...a leaf spring 229 extends into the supply passage 220 **and the delivery passage 212**, the leaf spring 229 and the pins or balls 260 being deflected to one side as the rivet is blown from the supply passage into fastener delivery passage 212." (Emphasis added)

Based on the above-quoted portions of the specification of the Blacket patent, the pins or balls 260 are located in the delivery passage 212, and the leaf spring 229 extends not only into the supply passage 220, but also into the delivery passage 212. This description is further supported by the illustration of Fig. 8, which shows the forward end of the leaf spring 229 aligned with the pins or balls 260 within the delivery passage 212.

As set forth in applicants' rewritten claim 1, from which claim 9 through 15 depend, directly or indirectly, the "catch element (18)" includes "at least one portion (21)" which is "removably extendable into and out of the feed path of the head guiding duct (13) externally of the transfer region (15)."

Based on the foregoing above-quoted portions, and Fig. 8, of the Blacket patent, the forward end of the leaf spring 229 of the Blacket patent is not extendable into and out of the feed path **externally of the delivery passage 212**, in the distinguishing manner set forth in applicants' claims 9 through 15, based on their dependency directly or indirectly from rewritten claim 1.

Claim 9 distinguishes further over the Blacket patent by setting forth that the transfer arrangement (8) comprises two positioning segments (9,10). The Blacket patent does not teach or suggest a transfer arrangement, or positioning segments therein.

Claim 10 distinguishes further over the Blacket patent for the same reasons expressed above with respect to claim 9, and, further, by setting forth that the transfer arrangement (8) comprises two positioning segments (9,10) and biasing elements (27,28). The Blacket patent does not teach or suggest a transfer arrangement, or positioning segments and biasing elements therein.

On page 4, paragraph 7, of the Office action dated September 12, 2001, the Examiner states that:

"The fingers/bars/pins/rods/ balls (260, 960, 1060, 1160 and those of other embodiments) of Blacket et al '114 are displaceable positioning segments in a conveying duct, as recited in claims 9 and 10."

Applicants set forth in claims 9 and 10 that the transfer arrangement (8) comprises the positioning segments (9,10), such that the component (12) "can be introduced into the conveying duct (16)." Claims 9 and 10 do not set forth that the positioning segments are "in a conveying duct," as stated by the Examiner in the above-quoted portion of the Office action. For this reason, claims 9 and 10 distinguish further over any teaching or suggestion of the Blacket patent.

Claim 11 further distinguishes over the Blacket patent for the same reasons expressed above with respect to claim 9, from which claim 11 depends, and, further, by setting forth that each positioning segment (9, 10) is pivotal around a respective pivot

axis (25,26), which, by the dependency from claim 9, places the pivot axis (25,26) in the transfer arrangement (8). The Blacket patent does not teach or suggest pivotal positioning segments in a transfer arrangement, but in the delivery passage (1412).

Also, the Examiner states in the Office action of September 12, 2001, that "The positioning segments (1460) of figure 24 have pivot axes, as recited in claim 11." As described in the specification of the Blacket patent (col. 6, lines 36 through 42):

"In the rivet support means 1340 and 1440 of FIGS. 23 and 24, the stems 1351, 1451 of the rivets 1317, 1417 are engaged by inclined fingers 1360, 1460 which can retract laterally (FIG. 23) or about a hinged axis (FIG. 24) (against springs 1361, 1461) when the punch engages and advances the rivets 1317, 1417 through the rivet delivery passage 1312, 1412."

Thus, as described in the Blacket patent, the inclined fingers 1460, and the springs 1461, are located in the delivery passage 1412, and retract against the springs 1461, within the delivery passage 1412 when the punch engages the rivet 1417. This description in the specification of the Blacket patent further supports applicants' position that the Blacket patent does not teach or suggest the invention as set forth in applicants' claim 11.

Claim 12 further distinguishes over the Blacket patent for the same reasons expressed above with respect to claim 9, from which claim 12 depends, and, further, by setting forth that each positioning segment (9, 10) has a form substantially corresponding to the cross section of the feed duct (11).

By virtue of the dependency of claim 12 from claim 9, claim 12 sets forth that the form of the positioning segments (9,10), which corresponds to the form of the feed duct (11), is located in the transfer arrangement (8). The form of the structure of the Blacket patent, to which the Examiner refers, is located in the delivery passage (12,112, etc.), and does not in the slightest correspond to the structure of the supply passage (20,120, etc.). The structure of the feed duct (11), as set forth in applicants' claim 12, is



designed to facilitate the feeding, in a movement laterally of the axis, of the components (12), with the corresponding structure of the positioning segments facilitating the same manner of feeding.

In the Blacket patent, the fingers/bars/pins/rods/balls (60,160,260,960, etc.) do not structurally correspond to the supply passage (20,120, etc.) and do not have a "form functionality corresponding to the feed duct" (supply passage) as the Examiner contends, for the feeding of the rivet (17,117, etc.) laterally of the axis of the rivet. Rather, the fingers/bars/pins/ rods/balls (60,160,260,960, etc.) support the rivet (17,117,etc.) in a suspended axial position in the delivery passage (12,112, etc.) to allow the punch (16,216,etc.) to move the rivet axially (not laterally) thereof, further into the delivery passage.

Claim 13 further distinguishes over the Blacket patent for the same reasons expressed above with respect to claim 9, from which claim 13 depends, and, further, for the reasons expressed above with respect to claim 12, that is that the positioning segments (9,10) are structured to form a continuation of the feed duct (11). Claim 13 further distinguishes over the Blackett patent by setting forth that the positioning segments (9,10) are structured to form a continuation of the feed duct (11) "between at least the feed duct (11) and the transfer region (15)."

Applicants' claim 14 further distinguishes over the Blacket patent for the same reasons expressed above with respect to claims 1 or 9, from each of which claim 14 depends. Further, applicants' claim 14 distinguishes over the Blacket patent by setting forth that the conveying duct (16) is formed by "a split sleeve (31)...." There is no comparable teaching or suggestion in the Blacket patent. Further, applicants set forth in claim 14 that at least one resilient element (36) is arranged on the second end portion (35) of the split sleeve (31), and the cross section of the conveying duct (16) tapering conically substantially from the first end portion (34) to the second end portion (35), and being enlargeable against the action of the element (36). The Blacket

patent does not teach or suggest, in the specification or the drawings, including Figs. 30 through 36, the combination of features noted immediately above.

Pins 2160, 2260 and 2360 in Figs. 30 through 34 of the Blacket patent show that the pins are spatially located, and do not form a split sleeve having a conveying duct which tapers conically. There is nothing in Figs. 30 through 34, and the related portion of the specification (col. 7, lines 33 through 39) regarding the pins 2160, 2260 and 2360 which teach or suggest a split sleeve having a conically tapering conveying duct which is enlargeable against the action of a resilient element, in the manner set forth in applicants' claim 14, and as illustrated in applicants' Fig. 5.

Further, there is nothing in the Blacket patent in Figs. 35 and 36, and the related portion of the specification (col. 7, lines 40 through 58), which could possibly suggest that the **spaced** plate-like pieces 2460 form a split sleeve having a conically tapering conveying duct which is enlargeable against the action of a resilient element, in the manner set forth in applicants' claim 14. Note that the function of the spring 2470 (Fig. 36) is to hold the pieces 2460 in place (col. 7, lines 43 and 44).

Applicants' pending claim 15, which, as noted above, the Examiner did not consider in the Office action of September 12, 2001, depends from claim 1 and is distinguishable (1) over the Blacket patent for the same reasons expressed above with respect to the rejection of claim 1 based on the Blacket patent, and (2) over the Moorman patent for the same reasons expressed above with respect to the rejection of claim 1 based on the Moorman patent.

For the foregoing reasons, applicants submit that applicants' claims 9 through 14 clearly and patentably distinguish over any teaching of the Blacket patent, and hereby request the withdrawal of the rejection of these claims based on the Blacket patent.

Applicants' claim 15 further distinguishes over the Blacket and Moorman patents by setting forth that (1) the catch element (18) has a first end portion (21) and a second end portion (48)

remote from the first end portion, (2) a stop surface (49) is positioned for engagement with the second end portion (48), and (3) the biasing element (39) normally urges the second end portion (48) into engagement with the stop surface (49) to limit the distance in which the first end portion (21) is urged into the feed path of the head guiding duct (13). Neither the Blacket or Moorman patents teach or suggest these features.

For the foregoing reasons, applicants submit that applicants' claim 15 clearly and patentably distinguishes over any teaching or suggestion of the Blacket and Moorman patents, taken singly or collectively.

Applicants submit that, for the foregoing reasons, applicants' claims 1, 2 and 7 through 15 are allowable, and hereby request such allowance.

Applicants submit further that this application is in condition for allowance and such allowance is hereby solicited.

The following rewritten claims 1 and 2, including the bracketing and underlining format, show the changes being proposed to the respective claims:

1. (Thrice amended) A conveyor for elongate components (12) designed with a head (41) and a shank (42), with a feed arrangement (7), for feeding the components in a prescribed direction, comprising a transfer arrangement (8) with a transfer region (15) into which the elongate components (12) are fed from a feed duct (11) comprising a head guiding duct (13) having a feed path for the heads (41), and a shank guiding duct (14) with the ducts (13) and (14) being in communication with a conveying duct (16) into which the components (12) can be moved from the transfer region (15), characterized by the transfer arrangement (8) which comprises:

at least one catch element (18) being located externally of the transfer region (15) and extending along, and adjacent, the head guiding duct (13) generally in the prescribed direction of the feeding of the elongate components (12);

at least one portion (21) of the at least one catch element (18) being removably extendable into and out of the feed path of the head guiding duct (13);

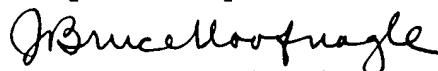
a biasing element (39) positioned to normally urge the at least one portion (21) of the at least one catch element (18) movably into the feed path of the head guiding duct (13) for engagement with the elongate components (12) being fed therethrough; and

the at least one catch element (18) and the at least one portion (21) thereof being mounted for deflected movement out of the feed path of the head guiding duct (13) against the normal urging of the biasing element (39) upon engagement with each of the elongate components (12) being fed through the feed path of the head guiding duct (13) to allow continued feeding of the elongate components (12) through the feed path.

2. (thrice amended) The conveyor according to claim 1, characterized in that the at least one catch element (18) has a locking face (22) facing [in a direction opposite the prescribed direction and] at least partially [limiting] the transfer region (15) to prevent any elongate component (12), which has passed into the transfer region (15), from slipping therefrom.

If the Examiner wishes to discuss any aspects of this response, or any other aspects of this application, the Examiner should call applicant's representative, J. Bruce Hoofnagle, at (410) 442-2417.

Respectfully submitted,



J. Bruce Hoofnagle  
Attorney for Applicant  
Reg. No. 20,973

February 28, 2002

J. Bruce Hoofnagle - TW199  
The Black & Decker Corporation  
701 East Joppa Road  
Towson, MD 21286  
Phone: (410) 442-2417

5196us3.amd